## Listing of the Claims

1. (Currently amended) An apparatus for ~~removing material adhering to a workpiece~~ promoting physical and chemical phenomena using the interface of a process liquid and an adjacent discontinuous phase, comprising:

a process tank having an interior designed to receive at least one workpiece, the process liquid, and the discontinuous phase;

~~means~~ at least one transducer for energizing the interface with megasonic energy, wherein all of the transducers are located below the workpiece; and

moving means for producing relative movement between the interface and the workpiece at a controlled rate when the interface contacts the workpiece.

2. (Currently amended) An apparatus as recited in claim 1, wherein the moving means ~~for producing relative movement between the interface and the workpiece is also a~~ further comprises means for moving the process liquid into and out of the interior of the process tank.

3. (Currently amended) An apparatus as recited in claim 1, further comprising automatic process control means connected to the transducers ~~means for energizing the interface~~ and the moving means ~~for producing relative movement~~.

4. (Currently amended) An apparatus as recited in claim 1, further comprising:

sealing means for forming a gas-tight seal about the interior of the process tank, and

pressurizing means for varying the pressure at the interior of the process tank.

5. (Original) An apparatus as recited in claim 2, further comprising means for independently moving a plurality of process liquids into and out of the interior of the process tank.

6. (Currently amended) An apparatus as recited in claim 1, further comprising overflow means for removing a portion of the process liquid from the process tank as an overflow liquid.

7. (Currently amended) An apparatus as recited in claim 6, further comprising:

a home container connected to the process tank; and

recirculation means for recirculating the overflow liquid to the home container.

8. (Original) An apparatus as recited in claim 1, further comprising means for maintaining the process liquid temperature at a predetermined value.

9. (Currently amended) An apparatus as recited in claim 6, ~~wherein the process liquid contains entrained particles,~~ further comprising means for using megasonic energy to propel ~~the~~ entrained particles from the process liquid into the overflow liquid.

10. (Original) An apparatus as recited in claim 2, further comprising means for introducing a gas into the process liquid for absorption into the process liquid.

11. (Currently amended) An apparatus for ~~removing material adhering to a workpiece~~ promoting physical and chemical phenomena using the interface of a process liquid and an adjacent discontinuous phase comprising:

a process tank having an interior designed to receive at least one workpiece, the process liquid, and the discontinuous phase;

~~means~~ one or more transducers for energizing the interface with megasonic energy, wherein all of the transducers are located below the workpiece; and

moving means for producing relative [linear] movement between the interface and the workpiece in alternating directions at a controlled rate.

12. (Currently amended) An apparatus as recited in claim 11, further comprising:

means for forming a gas-tight seal about the interior of the process tank;[,] and

wherein the moving means ~~for producing relative movement between the interface and the workpiece~~ further comprises:

a home container connected to the process tank,

pressure-varying equipment connected to one or both of the process tank and the home container,

level switches attached to the process tank and the home container, and

an automatic process control connected to the level switches, the pressure-varying equipment, ~~for varying pressure in the home container or the process vessel]~~ and the [means for energizing the interface] transducers.

13. (Currently amended) An apparatus as recited in claim 11, further comprising:

means for forming a gas-tight seal about the interior of the process tank[,]; and

wherein the moving means ~~for producing relative movement between the interface and the workpiece~~ further comprises:

a home container connected to the process tank;[,]

pressure-varying equipment connected to one or both of the process tank and the home container;[,]

determining means for determining when to alternate direction of the relative movement;[,] and

an automatic process control connected to the pressure-varying equipment, the [means for energizind the interface] transducers and the determining means ~~for determining when to alternate direction of relative movement~~.

14. (Currently amended) An apparatus as recited in claim 12, further comprising a plurality of process liquids, each process liquid having a home container connected to the process tank, and means for ~~dependently~~ independently moving each of the process liquids from its home container into and out of the process tank.

15. (Currently amended) An apparatus as recited in claim 11, further comprising overflow means for removing a portion of the process liquid from the process tank as an overflow liquid.

16. (Currently amended) An apparatus as recited in claim 15, further comprising:

a home container connected to the process tank; and

recirculating means for recirculating the overflow liquid to the home container.

17. (Original) An apparatus as recited in claim 11, further comprising means for maintaining the process liquid temperature at a predetermined value.

18. (Currently amended) An apparatus as recited in claim 15, [wherein the process liquid contains entrained particles,] further comprising means for using megasonic energy to propel ~~the~~ entrained particles from the process liquid into the overflow liquid while the interface is located above the workpiece.

19. (Original) An apparatus as recited in claim 11, further comprising means for introducing a gas into the process liquid for absorption into the process liquid.

20. (Currently amended) A method for ~~removing material adhering to a workpiece~~ promoting physical and chemical phenomena, comprising the steps of:

A) creating an interface between a process liquid and a discontinuous phase;

B) energizing the interface with megasonic energy from below the workpiece;

C) contacting the workpiece with the energized interface and moving the energized interface relative to the workpiece at a controlled rate; and

D) repeating step (C) a predetermined number of times, alternating the direction of relative movement with each repetition of step (C).

21. (Original) The method recited in claim 20, wherein the workpiece does not move during steps (C) and (D).

22. (Currently amended) The method recited in claim 21, ~~and~~ wherein the interface remains fully energized between ~~successive sweeps~~ repetitions of step (C).

23. (Original) The method recited in claim 20, wherein the workpiece is completely separated from the process liquid after the final repetition of step (C).

24. (Original) The method recited in claim 23, further comprising the step of drying the workpiece concurrently with or immediately following the final repetition of step (C).

25. (Original) The method recited in claim 24, wherein the process liquid is deionized water or dilute SC-1 at a temperature between 30 and 90 degress Celsius, and the drying step comprises exposing the workpiece to a purge gas until the process liquid evaporates from the workpiece.

26. (Original) The method recited in claim 24, wherein the drying step further comprises condensing a vaporized second chemical on the workpiece and in the liquid interface, and mixing the second chemical with the process liquid in the liquid interface [during separation of the workpiece from the process liquid] during the final repetition of step (C).

27. (Original) The method recited in claim 24, wherein the drying step further comprises wetting a misted second chemical on the workpiece and in the liquid interface, and mixing the second chemical with the process liquid in the liquid interface [during separation of the workpiece from the process liquid] during the final repetition of step (C).

28. (Currently amended) ~~The method recited in claim 24~~ A method for removing material adhering to a workpiece, comprising the steps of:

A) creating an interface between a process liquid and a discontinuous phase;

B) energizing the interface with megasonic energy;

C) contacting the workpiece with the energized interface and moving the energized interface relative to the workpiece at a controlled rate;

D) repeating step (C) a predetermined number of times, alternating the direction of relative movement with each repetition of step (C), wherein the workpiece is completely separated from the process liquid after the final repetition of step (C); and

E) drying the workpiece concurrently with or immediately following the final repetition of step (C), wherein process liquid is at a temperature slightly above its freezing point and initially at a pressure above its sublimation point, and the discontinuous phase is at a temperature below the freezing point of the process liquid, the drying step further comprising freezing the process liquid onto the workpiece as it is withdrawn from the process liquid, followed by removing the remaining process liquid and lowering the pressure of the discontinuous phase to sublime the frozen process liquid.

29. (Original) The method recited in claim 24, further comprising introducing a gas into the process liquid during step (D) for reducing the formation of droplets on the workpiece during the drying step.

30. (Cancelled).

31. (Cancelled).

32. (New) The method recited in claim 20, wherein step (D) is performed without spraying the workpiece.

33. (New) The method recited in claim 32, wherein step (C) is performed without spraying the workpiece.